

## **REMARKS**

### **Status of the Claims**

Claims 1, 4-11, 28 and 29 were pending in this application. By this response, Applicant has amended claims 1 and 29. These amendments do not add new matter and are fully supported. Moreover, Applicant has also added new claim 30. This new claim is also fully supported and does not add new matter. Finally, no claims have been cancelled.

In view of the above, claims 1, 4-11, 28, 29 and 30 are now pending in this application.

In the office action, the following rejections were made:

claims 1, 4-11, 28 and 29 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 8, 9, 12, 13, 15-17 and 24 of co-pending application no. 11/649,728;

claims 1, 4-11, 28 and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Komiyama et al. (U.S. Pat. No. 5,118,567) and Noguchi et al. (U.S. Pat. No. 5,476,752); and,

claims 1 4-11 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over European Patent No. 1,086,403 in view of Knell (U.S. Pat. No. 5,346,933) and Kamen et al. (U.S. Pat. No. 5,656,336).

Applicant respectfully traverses the above rejections and requests reconsideration of same in light of the above amendments and the following arguments.

### **Arguments**

With respect to the double patenting rejection, Applicant respectfully traverses same and submits that the claims in the present application are patentably distinct from the claims in the co-pending application. Notwithstanding same, should all other rejections be removed, Applicant is prepared to file a terminal disclaimer to over this rejection.

Turning to the remaining rejections, Applicant submits that independent claims 1, 29 and 30 are patentable over the cited art. Specifically, Applicant has amended claims 1 and 29 to specify that the only photoinitiator in the composition is one of those selected from the list of radical photoinitiators. *See, e.g.*, claims 1 and 29. Applicant submits that the compositions of claims 1 and 29 are not disclosed or suggested by the cited art. *See*, Office Action ¶¶ 5, 6.

Applicant submits that unlike the prior art references, the invention embodied in the claims does not allow for cross linking of the epoxy resin. In the cross linking reaction, only the monomer (in which the epoxy is dissolved) is cured by the free radicals. During the cross

linking, the epoxy does not react with itself or the monomer. In fact, the epoxy remains chemically unchanged in the cross linked monomer structure. This is only possible since, in contrast to the cited art, only radical photoinitiators are present. No catatonic photoinitiators are present. Use of same would lead to the undesired cross linking of the epoxy resin. The free radical initiators, which have a surplus electron (in contrast to catatonic initiators which have an electron deficit), can only connect (*i.e.*, crosslink) substances with double bonds (monomers). The double bonds of the acrylate group of the monomers are activated due to the electonegativity of the COO group in the immediate vicinity and therefore the radicals are able to crack these double bonds. The epoxy resin only contains double bonds within the aromatic rings, but these rings are so stable that the radicals cannot split them.

The Applicant submits that none of the cited art discloses or can be said to suggest the use of ***only*** radical photoinitiators to avoid the cross linking of the epoxy resin. The invention embodied in claims 1 and 29, specifically limits the photoinitiators to those radical initiators specified therein. *See, e.g.*, **Listing of Claims**, claims 1 and 29, *supra*. Applicant submits that one of ordinary skill in the art would appreciate that by only using these radical initiators, the epoxy resin is not cross linked. Thus, Applicant submits that claims 1 and 29 are patentable over the cited art.

Furthermore with respect to the rejection combining EP 1 086 403 and Knell/Knoll, the rejection is premised on a combination of the radical initiators of EP 1 086 403 with the resins in Kamen and/or Knell. Knell however deals with a heat cured epoxy. Accordingly, one of ordinary skill in the art would not look to EP 1 086 403 since it only discloses using a photoinitiator; as opposed to heat curing.

Moreover, Kamen, which does relate to UV photoinitiators, only uses cationic photoinitiators. There is no suggestion or motivation in Kamen for one of ordinary skill in the art to utilize the radial photoinitiators (from EP 1 086 403) in place of the cationic photoinitiators.

Furthermore, EP 1 086 403 distinguishes between pure radical photoinitiators and those hybrid processes using both cationic and radical. *See, e.g.*, ¶¶ 0005 and 0006. Indeed, EP 1 086 403 specifically identifies problems associated with the pure radical photoinitiators. *Id.* Thus, this reference specifically teaches away from the proposed combination and modification to only use the radical photoinitiators. Therefore, in view of the entire reference, there is no motivation

to modify same to arrive at the claimed compositions.

Accordingly, in view of the above, Applicant submits that, claims 1 and 29 are patentable over the cited art. Applicant also submits that the remaining dependent claims are patentable as well as they depend from a patentable independent claim.

With respect to new claim 30, that claim includes the feature that “the bisphenol A based epoxy resin is not cross linked by the at least one photoinitiator.” *See, **Listing of Claims***, claim 30, *supra*. As indicated above, since all of the cited references disclose epoxy resins in use with a photoinitiator that results in the cross linking of same, the cited art cannot be said to suggest or disclose all of the elements of this claim.

Accordingly, Applicant submits that claim 30 is patentable over the cited art.

### **CONCLUSION**

In view of the above, it is submitted that the present application is in condition for issuance and a notice of allowance is respectfully solicited.

If any additional fees are required with this correspondence, the Commissioner is authorized to debit our Deposit Account 50-0545.

Should anything further be required, a telephone call to the undersigned at (312) 226-1818 is respectfully solicited.

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Respectfully Submitted,

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